AirCard® 555 Wireless Network Card

Installation Guide

2130163
Rev 4

SIERRA WIRELESS
HEART OF THE WIRELESS MACHINE®

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Due to the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare when wireless devices such as the Sierra Wireless modem are used in a normal manner with a well-constructed network, the Sierra Wireless modem should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Sierra Wireless accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using the Sierra Wireless modem, or for failure of the Sierra Wireless modem to transmit or receive such data.

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Comments

Sales Desk:	Phone:	1-604-232-1488
	Hours:	8:00 AM to 5:00 PM Pacific Time
	E-mail:	sales@sierrawireless.com
Post:	Sierra Wireless 13811 Wireless Way Richmond, BC Canada V6V 3A4	
Fax:	1-604-231-1109	
Web:	www.sierrawireless.com	

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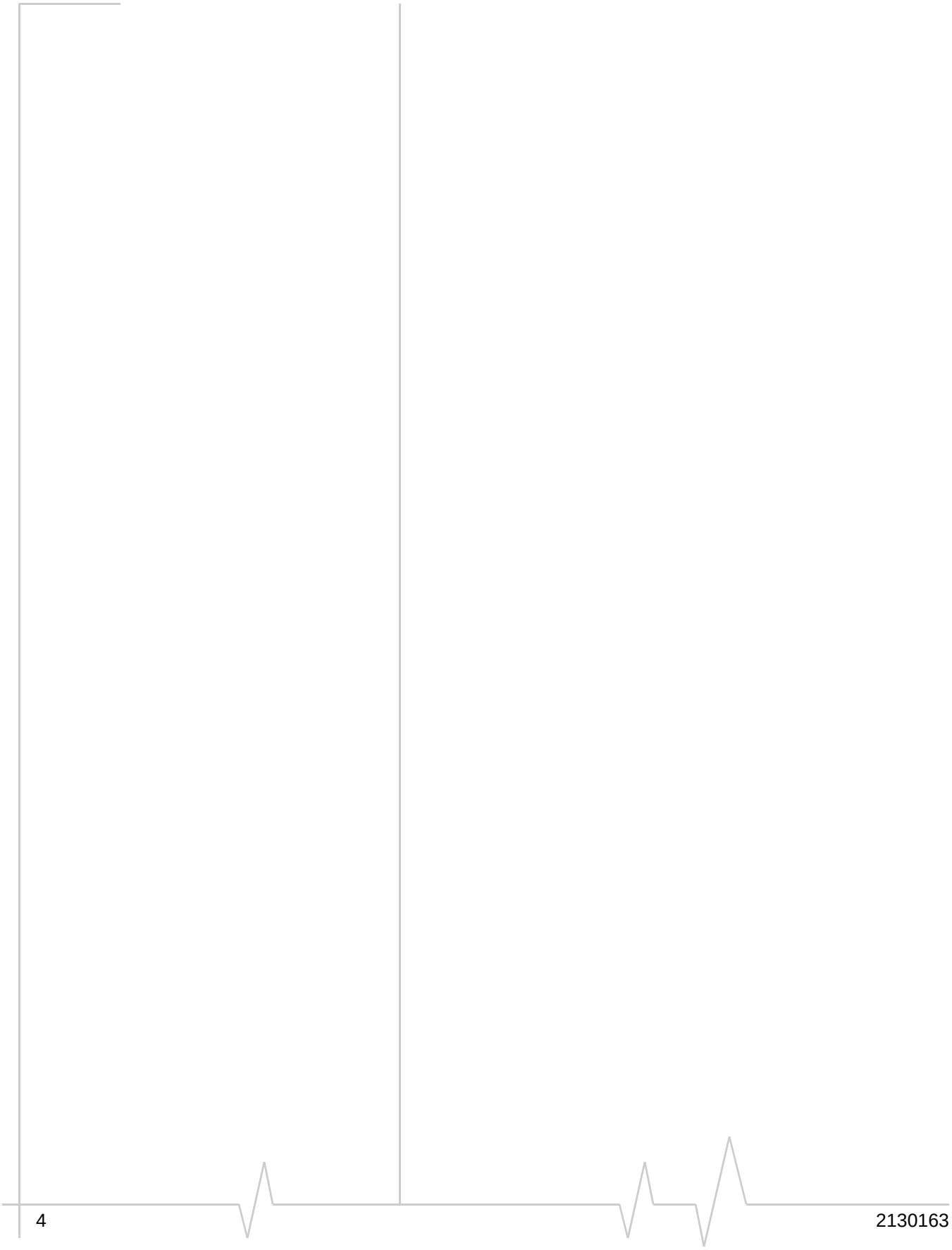

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1: Introducing the AirCard® 555 Wireless Network Card

- Welcome
- Feature summary
- Package contents
- System components

Note: Do not insert the AirCard into your PC Card slot prior to installing the software. It is important to install the software and driver in the correct order. For detailed procedures, see page 17 (notebook PCs) or page 29 (Windows CE devices).

Welcome

The Sierra Wireless AirCard 555 wireless network card is a dual-band wireless PC Card for cellular and North American PCS networks. It enhances the functionality of your mobile computing devices by adding wireless data, voice, and 2-way messaging.

The AirCard functions as a wireless network card (with LAN-like connectivity), a modem, and a mobile phone. This card allows you to do the following (subject to feature availability), without using a wireline phone or network:

- Connect to the Internet, VPN and corporate networks
- Send and receive e-mail
- Send and receive SMS messages
- Connect to a dial-up service
- Make and receive phone calls

The software provided with the AirCard also allows you to manage and monitor (on notebooks only) connections with a WiFi network adapter.

Feature summary

Note: For step-by-step instructions to access features of the AirCard, consult the online help available with Watcher.

The AirCard is designed to provide a wide range of capabilities using CDMA network technology. Implementation of these features will depend on the particular service provider and account features you have chosen.

Some features described in this manual may not be supported by your service provider or may not be available with your network account. For details of the services and accounts available, contact your service provider.

Network card

On notebook PCs, during high-speed packet connections, the AirCard is a true network card, functioning just like the network cards familiar to most corporate computer users. Once installed and configured, the AirCard can connect to the CDMA network automatically. You just insert the AirCard, allow Watcher to autolaunch[1] and authenticate your account on the network, then launch your Internet browser—you're online!

Modem

As a modem, the AirCard allows you to dial up any other modem (such as a corporate server), or send and receive faxes.

Phone

You can connect a headset (sold separately) to the AirCard and use it as a phone. Make and receive calls using digital voice quality, and have the security of emergency 911 access.

Short Messaging Service (SMS) is also available to exchange brief text messages with other CDMA subscribers.

CDMA 1X services

The AirCard operates over a type of wireless network called CDMA (Code Division Multiple Access).

CDMA 1X technology provides a variety of connectivity features, depending on your service provider and account:

- **High-speed packet data**, sometimes known as 1X, supports Internet connections with data rates up to 153.6 kbps (downlink from the network) and 76.8 kbps (uplink to the network). Actual speed depends on the network conditions. With this type of connection, the AirCard functions as a network card.

  Once the connection is established, you can open your browser and connect to any web site that is accessible

1. Autolaunch is supported on notebook PCs only.
   Running Watcher is optional—a high-speed connection is initiated upon insertion of the AirCard, provided:
   a) you have enabled, in Watcher, "Always-on" for the high-speed connection, and
   b) WiFi coverage is either not available, or is available but no WiFi profiles have been set to autoconnect.
   However, to make use of other features of the AirCard, you must run Watcher.

through the Internet, or access other Internet services (such as e-mail).

The connection is "active" in a 1X connection when data transmission is occurring. If data transmission stops for a period of time (determined by the network), the connection becomes "dormant". You can place and receive voice calls while the data connection is dormant but not when it is active.

Note: You may increase your data transmission speed by using compression software. Contact your service provider for details.

- **Circuit switched (dial-up) data**, using the earlier CDMA IS-95 specification, supports data connections to any dial-in service at rates up to 14.4 kbps. Circuit switched data capability also supports G3 facsimile (Fax Class 2.0), see "Fax Configuration" on page 51.
- **QNC (Quick Net Connect),** provides a simplified way to dial into an Internet connection (using circuit switched data) where 1X high-speed packet service is not available.
- **SMS (Short Message Service),** allows you to send and receive short text messages using the AirCard.
- **Voice** calling, including E911 (Phase I) support for emergency services.

Additional AirCard features

Beyond the features of the CDMA network, the AirCard provides additional software features:

- PIN security code to protect your AirCard and account from unauthorized use.
- An Activation Wizard (page 35) to assist with configuring your CDMA accounts. The AirCard supports two accounts.
- A Phone Book to manage your contacts on notebooks. On handhelds, Watcher has direct access to your Windows CE Contacts application.
- Sound options to customize ringtones for incoming calls, SMS messages, and voice mail alerts.
- A Scratch Pad to enter quick notes and phone numbers.
- A Call Log to track incoming, outgoing, missed calls and determine the amount of data transferred.
- Ability to manage and monitor connections with a WiFi network adapter (notebooks only).

Package contents

Your AirCard package contains the following components:

- AirCard 555 wireless network card
- Antenna
- Installation CD containing the AirCard software and this installation and troubleshooting guide
- Quick Start Guide
- Warranty Card

If you want to use the AirCard as a phone, a headset is necessary. Visit the Sierra Wireless web site at www.sierrawireless.com, for a listing of approved headsets that will work with the AirCard.

System components

Your AirCard 555 wireless network card is just one part of a system designed to provide you with a wide range of communication features. Every component of the system is needed to enable these capabilities.

Your host computing device

Your notebook or handheld hosts the AirCard hardware and runs the communication software: your web browser and e-mail application, and Watcher—the AirCard enabling software.

You may also have other software on your computer that can be used wirelessly with the AirCard, such as: file transfer applications (FTP), chat or instant messaging, a VPN (Virtual Private Network) client, client software for a corporate server application, or a fax application.

The AirCard 555 wireless network card

Note: You may also acquire an optional headset to use voice services.

Along with the antenna, this equips your computer with a radio modem and phone.

The AirCard fits into a standard Type II PC Card slot available on most notebook and Handheld PCs, and on Pocket PCs with a PC Card jacket accessory.

Every CDMA network operates on one of three radio frequency bands. As a dual-band product, the AirCard operates on two of these bands (see page 56), providing a wide coverage area.

The AirCard provides all the advantages of 1X where it is available while allowing you to use the older CDMA IS-95 standard where 1X has not yet been implemented. The benefits to you are that you can use the AirCard in any area that has coverage (assuming there are no account restrictions) and you will be able to take advantage of the fastest possible data transmission speed.

The AirCard drivers and enabling software

Required to control, monitor, and manage your wireless connections, this includes the Sierra Wireless Watcher™ application, and on notebook computers, the Network Adapter Manager for selecting your network connection card. The device drivers are the software that enables the AirCard to work with your computer's operating system.

The AirCard comes with a CD containing this software:

- Watcher application that you use to manage the AirCard and monitor your connections. Use the application's online help for step-by-step instructions to access features of Watcher.
- Network Adapter Manager application (for notebook PCs only) that allows you to switch between the AirCard and other network cards. This application also handles the autolaunch of Watcher when you insert the AirCard.
- The device driver software that provides the interface between the AirCard and your Windows® operating system.

The driver and application software *must* be installed before you insert the AirCard for the first time. Detailed instructions are provided in the following chapters.

A CDMA service provider account

Companies that operate CDMA networks and provide access to these networks are called *service providers*. You must have an account with a CDMA service provider to use the AirCard.

Note: You can use the Lock Code feature to prevent others from using your account should your AirCard be stolen. For information on this feature, see the online help.

Each service provider has its own pricing options. There may be flat rate accounts, which provide you a maximum number of minutes of network usage for a fixed monthly fee. There may be accounts for which you are charged for network usage by the minute or by the amount of data transmitted.

Your account may include a variety of other services such as SMS messaging and voice mail.

Each AirCard has been provisioned at the factory for use with a particular service provider. This sets the AirCard to use particular radio channels and enables services specific for that provider.

The process of setting up your account is called *activation*. Activation involves action by the service provider and configuration of the AirCard.

The procedure to configure (activate) your AirCard is covered in "Activation" on page 35.

The CDMA wireless network

Note: More information about CDMA networks is available on the CDMA Development Group web site, www.cdg.org.

This is the worldwide infrastructure providing the radio coverage that allows you to stay connected. Made up of radio towers, and a variety of network switches, routers, and servers, the network is an interconnection of many service provider companies.

Note: Most service providers have coverage maps on their web sites.

There are CDMA networks that operate in the frequency bands supported by the AirCard throughout North America and parts of Latin America, Asia, New Zealand, and Australia. However, each service provider operates a network that covers a limited geographical area within the overall CDMA coverage area.

Note: The fee for service is usually higher when you are roaming (connecting to a network other than the one belonging to your service provider). The Call Guard feature (subject to feature availability) can warn you before making or answering calls while roaming.

Most service providers have "roaming" agreements with other service providers, so that they can offer service outside of the coverage area of their own networks. For example, assuming you live in Vancouver and travel frequently to Seattle, you can obtain an account with a Vancouver service provider that has a roaming agreement with a service provider in Seattle. You would then have local service in Vancouver, and roaming service in Seattle. (Most service providers charge more for roaming service than local service.)

2: Getting Started

2

- The AirCard 555 software
- Account activation and configuration

Before you can begin using the AirCard, you must:

1. Install the AirCard enabling software and driver.
2. Activate an account and configure the AirCard to use your account (unless the AirCard has been pre-activated).

This section provides an overview of this process.

The AirCard 555 software

The AirCard comes with this software:

- Watcher™ application that you use to manage the AirCard and monitor your connections
- Network Adapter Manager application that allows you to switch between the AirCard and other network cards (for notebook PCs only)
- The driver software that provides the interface between the AirCard and your Windows operating system

The Watcher software (and on notebook PCs, the Network Adapter Manager) should be installed before you insert the AirCard for the first time. Detailed instructions are provided in "Installation on Notebook PCs" on page 17 and "Installation on Devices Running Windows CE" on page 29.

Account activation and configuration

You must have an account with a CDMA service provider to use the AirCard. The process of setting up an account is called *activation*.

If you purchased the AirCard directly from a service provider, you may already have an account; your AirCard may be pre-activated.

Unless your AirCard has been pre-activated, Watcher automatically detects that no account has been configured when you run it for the first time. Watcher then runs the Activation Wizard to guide you through the activation and configuration process.

Configuring the AirCard involves setting the phone number assigned by your service provider and may involve entering other network parameters and settings such as a user name and password to access services.

Your service provider needs to know:

- The billing information to use to collect payment for your network usage.
- The ESN (Electronic Serial Number) assigned to your modem during the manufacturing process. (The ESN is printed on a label on the AirCard and can be displayed in Watcher.) This number is used to help authenticate your account when you connect for service.

You require from your service provider:

- An activation code that gives you access to configure the account.
- A phone number for your AirCard.
- Additional information specific to your service provider such as:
  - A user ID (username) and password to authenticate your network connection.
  - A SID (System IDentifier) that identifies your home network area and is used in conjunction with your phone number to determine if you are “home” or “roaming”.

3: Installation on Notebook PCs

3

- System requirements
- Installation on Windows 95, 98, Me, 2000 and XP
- Installation on Windows NT
- Inserting the AirCard
- Removing the AirCard

This chapter guides you through the steps necessary to install the AirCard on a notebook PC.

Note: Do not insert the AirCard into your PC Card slot before installing the software.

The basic steps are:

1. Insert the AirCard 555 installation CD into your CD-ROM drive and install Watcher and the Network Adapter Manager.
2. Insert the AirCard into the PC Card slot (refer to page 27) to install the AirCard drivers.
3. If the AirCard has not been pre-activated, use the Activation Wizard to configure the AirCard (as described in "Activation" on page 35).

Before you begin the installation process, ensure your PC is running a supported operating system and meets the hardware requirements described below.

System requirements

The AirCard is supported on:

- Windows 95 OSR2 and higher (see "Windows 95 support" on page 18)
- Windows 98 / 98 SE
- Windows Me
- Windows NT 4.0 with Service Pack 6a
- Windows 2000 with Service Pack 1 or later (Service Pack 4 is recommended)
- Windows XP (Home and Professional versions)

Subject to feature availability, the AirCard software supports Outlook integration, allowing you to read and send SMS messages from Outlook, and phone people in your Outlook Contacts. To use Outlook integration, you require:

- Windows 2000 or XP, and
- Outlook 2000 or newer (Outlook Express is not supported).

On Windows 2000 and XP, the AirCard software also allows you to monitor connections with a WiFi network adapter.

To install the AirCard, you require these system resources:

Table 3-1: System Resource Requirements

Card Slots	1 Type II PCMCIA (PC Card) Slot
Communications Ports	1 Available
Disk Drive	CD-ROM (for installation only)
I/O Resources	1 IRQ, 40 bytes I/O Space
Memory	10 MB
Disk Space	2 MB

Windows 95 support

Dial-up Networking and Winsock are components of the Windows operating system required by the AirCard. The versions of these components originally shipped with Windows 95 OSR2 do not meet the AirCard requirements. If you are using Windows 95 OSR2 and have not yet upgraded to Winsock2 and Dial-up Networking version 1.2 or later, you must do so before installing the AirCard. The required versions can be downloaded from the Microsoft web site, www.microsoft.com.

AirCard software installation procedures

This section provides detailed installation instructions. Proceed to the section that corresponds to your operating system.

Operating System	Page
XP	page 20
2000	page 20

Operating System	Page
Me	page 20
98 / 98SE	page 20
NT	page 22
95 OSR2	page 19

Windows 95 installation

Preinstallation procedures

Note: Windows system files may be required to complete installation of the AirCard 555 driver. These files are located on the Windows CD and may be stored on your hard drive in .CAB files. Ensure you have your Windows CD, or know the location of the .CAB files before proceeding.

Depending on how Windows 95 was installed on your PC and what devices have since been installed, your PC Card (PCMCIA) slots may or may not have been enabled and the TCP/IP stack may or may not be installed. Since the AirCard requires these, this section guides you through these steps.

Verifying that the PC Card slots are enabled

1. Open the Control Panel by selecting **Start > Settings > Control Panel**.
2. Double click the PC Card icon.
3. If the PC Card (PCMCIA) Properties window is displayed, the slots are enabled and you can proceed to the section "Verifying that TCP/IP is installed" on page 19.

   If the PC Card (PCMCIA) Wizard is displayed, the slots are not yet enabled. The wizard guides you through the enabling process. (Generally it is sufficient to click **Next** at each window.) When prompted to restart the PC, click **Yes**.

Verifying that TCP/IP is installed

1. If the Control Panel is not already open, select **Start > Settings > Control Panel** to open it.
2. Double click the Network icon.
3. Look for "TCP/IP" next to any listing on the Configuration tab.
   - If TCP/IP is listed, you can close the window and proceed to the section "Windows 95, 98, Me, 2000, and XP installation procedures" on page 20.

- If TCP/IP is not listed, continue with step 4 of this process.

4. Click the **Add...** button to open the Select Component Type window.
5. Select **Protocol** in the component type list and click the **Add...** button to open the Select Network Protocol window.
6. Select **Microsoft** under Manufacturers and **TCP/IP** under Network Protocols, then click the **OK** button.
7. Verify that a listing for TCP/IP appears in the Network window and then click the **OK** button to close the window.
8. If you are prompted that your network is not complete, make the selections appropriate to your network configuration.
9. If you are prompted for the Windows CD, either insert the Windows 95 CD, or enter the path to the .CAB files.
10. Click **Yes** at the prompt to restart your PC. Once the PC has restarted, proceed to the next section.

Note: A driver is software that provides the interface between a device (such as the AirCard) and the operating system on your PC (such as Windows 98).

Note: Users of Windows 2000 must be logged in with administrative privileges to install the AirCard software. Users of Windows XP may require administrative privileges, depending on the XP installation.

Windows 95, 98, Me, 2000, and XP installation procedures

To install Watcher, the Network Adapter Manager, and the AirCard driver:

1. If the installation CD is not already in your CD-ROM drive, insert it. The CD should autostart and display a menu.

   If the CD does not autostart, select **Start > Run** and enter **d:\launch.exe** where **d** is the drive letter of your CD-ROM drive.
2. From the CD startup window, select **notebook installation and documentation** and then **notebook software installation** to launch the InstallShield® Wizard.
3. If the Open With... window appears, cancel the installation (your computer is missing some files required for the installation). Search for Instmsia.exe (if you're running Windows 95, 98 or Me) or Instmsiw.exe (if you're running Windows 2000) among the downloads at www.microsoft.com. Install the file on your computer, then rerun the AirCard software installation.
4. If the Ikernel Application Error window appears:

   a) Cancel the installation.

   b) Download the file:

http://support.installshield.com/kb/files/Q108312/ikernelupdate.exe.

c) Install the file on your computer, then rerun the software installation.

5. Use the **Next** and **Back** buttons to navigate through the wizard noting the following:
   - To proceed with the installation, you must click **Yes** to indicate your acceptance of the terms of the license agreement.
   - Use the default settings for the Destination Location and Program Folder unless you have special requirements and an advanced understanding of PC configuration. (The Destination Location dictates where the software is installed. The Program Folder dictates the name assigned to the software in Add/Remove Programs in the Control Panel.)
   - Click **Finish** to close the last screen of the wizard.
6. If you are running Windows XP, a window indicates that the driver files will be copied to your notebook. Click **OK** and click **Continue Anyway** on the Software Installation window if it appears. The window may appear more than once; the AirCard is a multifunction card.

Note: Do not forcefully connect the antenna, or forcefully insert the AirCard. This may damage connector pins. For instructions on removing the AirCard, see page 27.

7. Click **OK** when you are prompted to insert the AirCard. Attach the antenna and insert the AirCard into your PC Card slot (refer to page 27).

Note: For Windows 95, 98, and Me users: If your computer has a built-in network adapter, your computer may appear to have stopped responding during the card detection process. The operating system is resolving resource issues related to your built-in adapter and the AirCard. ***Do not abort the installation process.*** *Allow several minutes for the process to complete.*

8. Click **OK** when you are notified that the installation is complete.
9. If your operating system is Windows 95, 98, or Me, restart your PC from the **Start** menu.

Note: Windows 95, 98, and Me users: If your computer has a built-in network adapter, another long delay occurs the first time the AirCard is inserted after this restart. Subsequent insertions of the card will not experience this delay.

On completion of this step, Watcher, the Network Adapter Manager, and the AirCard driver are installed.

Proceed to configure the AirCard to use your account (if it was not pre-activated). See "Activation" on page 35.

Windows NT installation procedures

Note: Users of Windows NT must be logged in with administrative privileges to install the AirCard software.

To install Watcher and the Network Adapter Manager:

1. If the installation CD is not already in your CD-ROM drive, insert it. The CD should autostart and display a menu.

   If the CD does not autostart, select **Start > Run** and enter **d:\launch.exe** where **d** is the drive letter of your CD-ROM drive.

2. From the CD startup window, select **notebook installation and documentation** and then **notebook software installation** to launch the InstallShield® Wizard.

3. If the Open With... window appears, cancel the installation (your computer is missing some files required for the installation). Search for Instmsiw.exe among the downloads at www.microsoft.com. Install the file on your computer, then rerun theAirCard 555 software installation.

4. If the Ikernel Application Error window appears:

   a) Cancel the installation.

   b) Download the file:

   http://support.installshield.com/kb/files/Q108312/ikernelupdate.exe.

   c) Install the file on your computer, then rerun the software installation.

5. Use the **Next** and **Back** buttons to navigate through the wizard noting the following:
   - You must click **Yes** to indicate your acceptance of the terms of the license agreement to proceed with the installation.
   - Use the default settings for the Destination Location and Program Folder unless you have special requirements and an advanced understanding of PC configuration. (The Destination Location dictates where the software is installed. The Program Folder dictates the name assigned to the software in Add/Remove Programs in the Control Panel.)
   - A check box allows you to choose to have a desktop shortcut for Watcher. This gives you the option of launching Watcher by double clicking an icon on your desktop (as well as from the Start menu).
   - Click **Finish** to close the last screen of the wizard.

Windows NT driver installation

Since Windows NT does not have the "Plug and Play" feature included in other Windows operating systems, installing the AirCard driver requires more steps. Installation involves:

- Verifying that your PC Card slots are enabled (page 23)
- Checking whether Networking is installed (page 24)
- Installing the network card driver (procedures depend on whether or not Networking is already installed) (page 25 and page 24)
- Installing the modem driver (page 26)
- Verifying that RAS (Remote Access Service) is installed (page 27)

Note: You must reinstall the Windows NT Service Pack after you install the AirCard driver. Ensure you have your Service Pack CD before you begin. (Version 6a is supported.)

Note: Windows system files may also be required to complete the installation. These files are located on the Windows NT CD and may also be stored as .CAB files on your hard drive. If the .CAB files are not available to you, the recommendation is to copy the Windows NT driver from the AirCard CD to a directory on your hard drive. The Windows NT driver is located on the AirCard installation CD in the directory \Drivers\WinNT.

Windows NT Users: *Your PC must be off whenever you insert or eject the AirCard.*

1. If your PC is on, close any Windows programs that are running and shut down the PC.
2. Attach the antenna to the AirCard, and with the label facing up, carefully insert the AirCard into your PC Card slot (refer to page 27). Turn on your PC.
3. If the AirCard 555 installation CD is not already in your CD-ROM drive, insert it.
4. If the CD startup menu is displayed, use the **exit** option in the lower left corner of the screen to exit the menu.

Verifying that the PC Card slots are enabled:

1. Open the Control Panel by selecting **Start > Settings > Control Panel** from the taskbar.
2. Double click the **PC Card** icon.
3. If a window titled PC Card (PCMCIA) Properties appears, the slots are already enabled. Close this window and proceed to "Determining whether Networking is installed".
4. If the PC Card (PCMCIA) Wizard appears, the slots are not yet enabled, and the wizard guides you through the instal-

lation process. (Generally it is sufficient to click **Next** at each window.) If prompted to restart your PC, click **Yes** and allow the PC to shut down, then restart it.

Determining whether Networking is installed:

1. If the Control Panel is not open, select **Start > Settings > Control Panel**.
2. Double click the **Network** icon.
3. If the Network window opens, networking is already installed. Proceed to the section "Installing the network card driver when Networking is already installed" on page 25.
4. If a dialog box appears, prompting you to install Networking, the component has not yet been installed. Proceed to the section "Installing the network card driver when Networking has not been installed" that follows.

Installing the network card driver when Networking has not been installed:

1. Click **Yes** at the prompt, "Do you want to install it now?" to launch the wizard that installs Networking.
2. Click the check boxes on the first window of the wizard so that **Wired to the network:** is checked and **Remote access to the network:** is NOT checked. Click **Next** to proceed.
3. Click the **Select from list...** button to open the Select Network Adapter window.
4. Click the **Have Disk...** button to open the Insert Disk window.
5. If you have copied the driver from the AirCard installation CD to your hard drive, enter the path to the driver and click **OK** to open the Select OEM Option window.

   If you are installing the driver from the AirCard installation CD, enter **d:\Drivers\WinNT** where **d** is the drive letter for your CD-ROM drive and click **OK** to open the Select OEM Option window.
6. If Sierra Wireless AirCard 555 is highlighted, click **OK**. The Sierra Wireless AirCard 555 should appear in the Network Setup Wizard under Network Adapters. Otherwise click **Cancel** and repeat the previous two steps.
7. Click **Next** to display a list of network protocols.
8. Ensure **TCP/IP Protocol** is checked (as well as any other protocols appropriate to your network configuration) and click **Next** to display a list of network services.
9. Select the services appropriate to your network configuration and click **Next**. (For the purpose of installing the AirCard, it does not matter what selections you make in this window.)

Note: Use the Windows NT Diagnostics window to locate an available IRQ and I/O space. Make note of the COM Port that you use to install the network card driver. You must enter the same COM Port when installing the modem driver.

10. Click **Next**.
11. If the Windows NT Setup window appears, system files are required to install the components you checked. Either insert the Windows NT CD and enter your CD-ROM drive letter, or enter the path to the .CAB files. Click **Continue**.
12. Use the drop down menus to select an I/O Port, Interrupt, Memory, and COM Port, noting that the AirCard requires 1 IRQ and 40 bytes of I/O Space. Click **Continue**.
13. If the Windows NT Setup window appears again, enter the path to your CD-ROM drive or the CAB files.
14. Click **Yes** at the DHCP prompt to proceed to a display of network bindings. (DHCP is required by the AirCard regardless of your network configuration.)
15. Click **Next** to start the Network component.
16. Click **Next** to proceed to the window in which you enter a Computer Name and Workgroup or Domain.
17. Enter the information appropriate to your network configuration and click **Next**.
18. Click **Finish** on the final window of the wizard.
19. Click **Yes** at the prompt to restart your PC. (You must restart your PC to complete the driver installation.)
20. When the PC restarts, reinstall your Service Pack.

On completion of this step, the network card driver is installed and you can proceed to install the modem driver. Follow the instructions in the section, "Installing the modem driver" on page 26.

Installing the network card driver when Networking is already installed:

1. Click the **Adapters** tab in the Network window.
2. Click the **Add...** button to open the Select Network Adapter window.
3. Click the **Have Disk...** button to open the Insert Disk window.
4. If you have copied the driver from the AirCard CD to your hard drive, enter the path to the driver and click **OK** to open the Select OEM Option window.

   If you are installing the driver from the AirCard CD, enter **d:\Drivers\WinNT** where **d** is the drive letter for your CD-ROM drive and click **OK** to open the Select OEM Option window.
5. If Sierra Wireless AirCard 555 is highlighted, click **OK**. The Sierra Wireless AirCard 555 should appear under Network Adapters in the Network Setup Wizard. Otherwise, click **Cancel** and repeat the previous two steps.

Note: Use the Windows NT Diagnostics window to locate an available IRQ and I/O space. Make note of the COM Port that you use to install the network card driver. You must enter the same COM Port when installing the modem driver.

6. Use the drop-down menus to select an I/O Port, Interrupt, Memory, and COM Port, noting that the AirCard requires 1 IRQ and 40 bytes of I/O Space. Click **Continue**.
7. Select the **Obtain an IP address from a DHCP Server** radio button and click the **Close** button.
8. Click **Yes** to confirm that you want to use DHCP.
9. Click **No** if prompted to restart your PC. (You will restart the computer later in this process.)

On completion of this step, the network card driver is installed and you can proceed to install the modem driver. Follow the instructions in the next section.

Installing the modem driver

1. You must have the AirCard installation CD in the CD drive. If the CD startup menu is displayed, use the **exit** option in the lower left corner of the screen to exit the menu.
2. In the Control Panel, double click the **Modem** icon to open the Modem Properties window.
3. Click the **Add** button to open the Install New Modem wizard.
4. Select **Don't detect my modem, I will select it from a list** and click **Next**.
5. Select the **Have Disk** button.
6. Enter **d:\Drivers\WinNT\mdmac555** where **d** is the drive letter for your CD-ROM drive and click **Open**.
7. Click **OK**.
8. Verify that Sierra Wireless AirCard 555 Modem is displayed and click **Next**.
9. Select the **Selected Ports** radio button and select the same communications port you selected when you installed the network card driver. Click **Next**.
10. Click **Finish**.
11. If you are prompted that Dial-Up Networking needs to be configured, click **Yes**.
12. Click **Add** in the Remote Access Setup window.
13. Select the AirCard 555 listing under RAS Capable Devices and click **OK**.
14. If you are prompted to restart your PC, click **Yes**. Otherwise restart your PC from the Start menu.
15. When the PC restarts, reinstall your Service Pack.

On completion of this step, the modem driver is installed. Verify that Remote Access Service is installed before proceeding to configure your account.

Verifying that RAS is installed:

1. In the Control Panel, double click the **Network** icon to open the Network window.
2. Click the **Services** tab.
3. If Remote Access Service is listed under Network Services, the component is installed and you can skip to the next section. Otherwise, proceed to step 4.
4. Click to select **Computer Browser**.
5. Click the **Add...**button to open the Select Network Service window.
6. Select **Remote Access Service** and click **OK**.
7. If the Windows NT Setup window appears, either insert the Windows NT CD and enter your CD-ROM drive letter, or enter the path to the .CAB files. Click **Continue**.
8. Select **COMx - Sierra Wireless AirCard 555...** (where **x** is the number of the COM Port you assigned to the AirCard 555) from the drop-down menu and click **OK**.
9. Verify that **Sierra Wireless AirCard 555...** is displayed in the Remote Access Setup window and click **Continue**.
10. Restart your PC if prompted.

On completion of this step the AirCard driver is installed.

Proceed to configure the AirCard to use your account (if it was not pre-activated). See "Activation" on page 35.

Card insertion and removal

Inserting the AirCard

Note: If you are using Windows NT, you must turn off your PC whenever you insert or eject a PC Card.

Note: If you also use the AirCard 300 with your computer, eject the AirCard 300 before you use the AirCard 555.

To insert the AirCard into a notebook:

1. Attach the antenna to the circular gold connector on the end of the AirCard. DO NOT FORCE.
2. With the picture label facing up, insert the AirCard into the slot.

In **Windows 95, 98, 2000, Me, and XP**, when you insert the AirCard, the following should occur:

- If sound effects are enabled, the PC beeps.

- The PC Card icon appears in the system tray, if it is not already displayed for another card, (and unless the feature has been disabled).
- Watcher launches (unless the autolaunch feature has been disabled).

The AirCard is powered as soon as you insert it.

Removing the AirCard

Note: If you are using Windows NT, you must turn off your PC whenever you insert or eject a PC Card.

To remove the AirCard (Windows 95, 98, 2000, Me, or XP):

1. Close Watcher if it is open.
2. Click the PC Card icon in the system tray to display the option to stop the card.
3. Click "Stop Sierra Wireless AirCard 555 PC Card Parent" (Windows 95, 98, 2000, or Me) or "Safely remove Sierra Wireless AirCard 555 PC Card Parent" (Windows XP).
4. If a dialog box appears notifying you that it is safe to remove the card, click **OK**.
5. Use the ejector to remove the AirCard from the slot. Do not pull the AirCard out by the antenna.

4: Installation on Devices Running Windows CE

4

- System requirements
- Software installation
- Card insertion and removal

This chapter provides installation instructions for users of computers running the Windows CE operating system. The AirCard runs on Handheld, Pocket, and Tablet PCs running Windows CE 3.x and CE .NET (CE .NET is sometimes called "CE 4.x").

Note: Do not insert the AirCard into your PC Card slot before installing the software.

Before installing the AirCard software on your CE device, ensure you have the required hardware and software. Since software cannot be directly installed to a CE device, you require a desktop or notebook PC to perform the installation.

During the installation, you install the software to a desktop or notebook PC that functions as the "host". The host connects to the CE device by a cable or infrared ports and the software is downloaded from the host to the CE device using the Microsoft ActiveSync® application.

System requirements

These Windows CE operating systems are supported:

Pocket PCs:

- Pocket PC
- Pocket PC 2002
- Pocket PC 2003

Handheld PCs:

- Handheld PC 2000

CE .NET devices:

- CE .NET (4.1 or later)

To install the AirCard, your CE device must have these resources:

Table 4-1: CE Device Resource Requirements

Card Slots	1 Type II PCMCIA (PC Card) Slot (An accessory pack on Pocket PCs)
Memory	900 kB

Determining your version of Windows CE

Pocket PC users: If you do not know what version of Windows CE you are using, on the device:

1. Select **Start > Settings**
2. Tap the **System** tab
3. Tap the **About** icon.
   - "Windows 4.20.1081 (Build...)" indicates that your operating system is Pocket PC 2003
   - "Windows 3.0.11171 (Build...)" indicates that your operating system is Pocket PC 2002
   - "Windows 3.0.9348 (Build...)" indicates that your operating system is Pocket PC

ActiveSync installation requirements

Note: ActiveSync is made by Microsoft and is included with PCs running Windows CE. (It is also available from the Microsoft web site.) ActiveSync 3.5 is supported on Windows 98, 2000, XP, and NT 4.0 with Service Pack 6 or later. ActiveSync 3.7 is supported on Windows 98 SE, 2000, Me, NT, and XP.

The host PC (the desktop or notebook PC to which you install the software) must have:

- A CD-ROM drive
- ActiveSync version 3.5 or 3.7 installed.

Note: If you are using Pocket PC 2003 or Windows CE .NET, you need ActiveSync 3.7 or later.

If you are using Pocket PC or Pocket PC 2002, you need ActiveSync 3.5 or later.

You must also have the ability to establish a connection between the CE device and host. This could be:

- A cable connection using either a USB or serial cable (requiring the cable and that the CE device and host have the necessary connectors)
- An infrared connection (requiring that both the CE device and host have infrared ports).

Software installation

There are two methods of installing and downloading the software using ActiveSync. You can either:

- Connect the host and the CE device before you install the software to the host. (In this case, you are prompted to initiate the download as soon as the software installation is complete.)

  Or

- Install the software to the host and then connect the host and the CE device, as described here.

This process installs Watcher and the AirCard drivers.

Note: Do not insert the AirCard into the CE device before downloading the software.

Installing the software on the host

1. If the AirCard installation CD is not in your CD-ROM drive, insert it. The CD should auto-start and display a menu.
   - If the CD does not auto-start, select **Start > Run** and enter **d:\launch.exe** where **d** is the drive letter of your CD-ROM drive.
2. From the CD start-up menu, select the option appropriate to your device and operating system (**Handheld PC 2000 installation and documentation** or **Pocket PC installation and documentation** or **CE .NET installation and documentation**.).
3. From the next menu, select the installation option that corresponds to your version of Windows CE.

   This launches the installation wizard that installs the software to the host.
4. Follow the instructions on the screen.
   - Using the default settings for the Destination Location and Program Folder is recommended unless you have special requirements and an advanced understanding of PC configuration.
   - A dialog box displays this message, “On the next mobile device connection, the installed applications will be downloaded to the device.” Click **OK**.
   - Use the **exit** option in the lower right corner of the window to close the CD start-up menu.

Downloading the software to the CE device

1. Connect the CE device to the host in one of these ways:
   - Connect the CE device and the host PC, using the serial or USB cable provided with your CE device, or
   - Place your CE device in its cradle and connect the cradle to the host PC using the serial or USB cable provided with your CE device, or
   - Align the infrared port on your CE device with the infrared port on your host PC

   ActiveSync should launch automatically when the host and CE device are connected.
2. If you are prompted to indicate whether you want to set up a partnership, click Yes or No and click **Next**. (For the purpose of downloading the AirCard software, it does not matter whether you have a partnership.) You should then be prompted that there is software to download.
3. In the Installing Applications window, click **Yes** to start the download. When complete, you are prompted to check your mobile device screen to see if additional steps are required.
4. Click **OK**.
5. Disconnect your device from the host.
6. Reset your CE device.
   - If your device has a reset button (usually a circular indentation on the bottom of the device, or in the case of Handheld PCs, on the keyboard) press the stylus or pen into the reset button.
   - If there is no reset button, you may need to run a software utility to reset the device. (If you do not know how to reset the device, Consult the documentation that came with the device.)
7. Insert the AirCard into your device (described in the following sections).

Note: If you are unable to establish a connection, launch ActiveSync from the Start menu and use the online help in ActiveSync.

Inserting the AirCard into a Pocket PC

Note: If you also use the AirCard 300 with your computer, eject the AirCard 300 before you use the AirCard 555.

The Pocket PC operating system doesn't allow two network devices to be simultaneously inserted into PC Card slots. If you are using a PCMCIA jacket that has two slots, ensure the second slot does not contain another network interface card when you use the AirCard.

To insert the AirCard into a Pocket PC:

1. If the PCMCIA jacket accessory is not already attached, slide the Pocket PC bottom first into the jacket. It should click into place.
2. Attach the antenna to the circular gold connector on the end of the AirCard. DO NOT FORCE.
3. With the label facing towards the front of the Pocket PC, insert the AirCard into the slot at the top of the jacket.

Note: On Pocket PCs, anytime you eject and re-insert the AirCard, restart your Pocket PC by turning it off and on again.

Inserting the AirCard into a Handheld or Tablet PC

To insert the AirCard into a Handheld or Tablet PC:

Note: If you also use the AirCard 300 with your computer, eject the AirCard 300 before you use the AirCard 555.

1. Attach the antenna to the circular gold connector on the end of the AirCard. DO NOT FORCE.
2. With the label facing towards the front of the Pocket PC, insert the AirCard into the slot.
3. If your device is not plugged into a power supply, the prompt, "Do you want to use this PC card on battery power?" appears. Tap **Yes**.

Removing the AirCard

Ejecting the AirCard on a Pocket PC

To remove the AirCard from your Pocket PC:

1. Stop Watcher by selecting **Start > Settings > System tab > Memory > Running Programs**. In the "Running Program List", select "**Watcher**", then tap **Stop**.
2. Push the PC Card eject button on the Pocket PC to eject the card.
3. Grasp the AirCard and remove it from the slot.

Ejecting the AirCard on a Handheld or Tablet PC

To remove the AirCard from your Handheld PC or Tablet PC:

1. Close Watcher.
2. Push the PC Card eject button on your computer to eject the card.
3. Grasp the AirCard and remove it from the slot.

5: Activation

- Account configuration procedures
- Manual activation
- Voice-assisted and automated activation

Account configuration procedures

The final step to making the AirCard operational is configuring it to use your CDMA service provider account. The process of activation configures your AirCard with the required account parameters (phone number, username, password, etc.).

If you purchased a pre-activated AirCard, this step is not necessary. Once the application software and driver are installed, the AirCard is ready for use.

Otherwise, you must use the Activation Wizard to activate and configure your account.

Note: The AirCard can support two accounts (phone numbers), allowing, for example, one account for business and another for personal use.

Activation Wizard

The Activation Wizard walks you through the process of configuring an account. The process and options vary based on the service provider. The wizard supports Voice-Assisted or Automated Activation in addition to Manual Activation where the service provider supports them.

This section is a guide only. Consult the Quick Start Guide, and follow the directions on screen and instructions given by your service provider representative.

To activate an account and configure your AirCard for use:

1. Attach the antenna and insert the AirCard into your PC Card slot (for notebooks, refer to "Inserting the AirCard" on page 27; for CE devices, refer to "Inserting the AirCard into a Pocket PC" on page 33 or "Inserting the AirCard into a Handheld or Tablet PC" on page 33).
2. Watcher should start automatically. If it does not, start Watcher by selecting:

   Notebooks:
   Start > Programs > Sierra Wireless > AirCard 555 > AirCard 555 Watcher

Handhelds:
Start > Programs > AirCard 555 Watcher

3. Watcher should detect that the AirCard has not been activated and automatically start the Activation Wizard. If it does not start the wizard, in Watcher select:
   - Notebooks, Handheld PCs, and CE .NET devices: **TOOLS > Activation Wizard**
   - Pocket PCs: **Admin > Activation Wizard**
4. The wizard presents a selection window, offering the activation methods supported by your service provider:
   - **Manual Activation** involves phoning a service provider, exchanging information, and entering your account information into the appropriate fields in the wizard. (You require a phone, other than your AirCard, to use this method.)
   - **Voice Assisted** or **Automated Activation** involves the AirCard placing a call to a special number at the service provider. Much of the process is automated, but you may require a headset (or TTY). Follow onscreen prompts.

To begin activation of the AirCard, select the method and click **Next**.

Manual activation

To use manual activation, use the **Next** and **Back** buttons to navigate through the wizard, noting the following:

- Obtain the billing information listed on the second window of the wizard before phoning the service provider or proceeding to the next window.
- Contact your service provider. The representative will request your ESN (Electronic Serial Number). This is displayed in the Activation Wizard (and is printed on the AirCard box and on the label on the back of the AirCard).
- As prompted by the wizard, enter the information provided by the service representative.
- Select **Finish** on the final window of the wizard.

On completion, the AirCard is ready for use. The following chapters explain how to use Watcher to manage and monitor your connections.

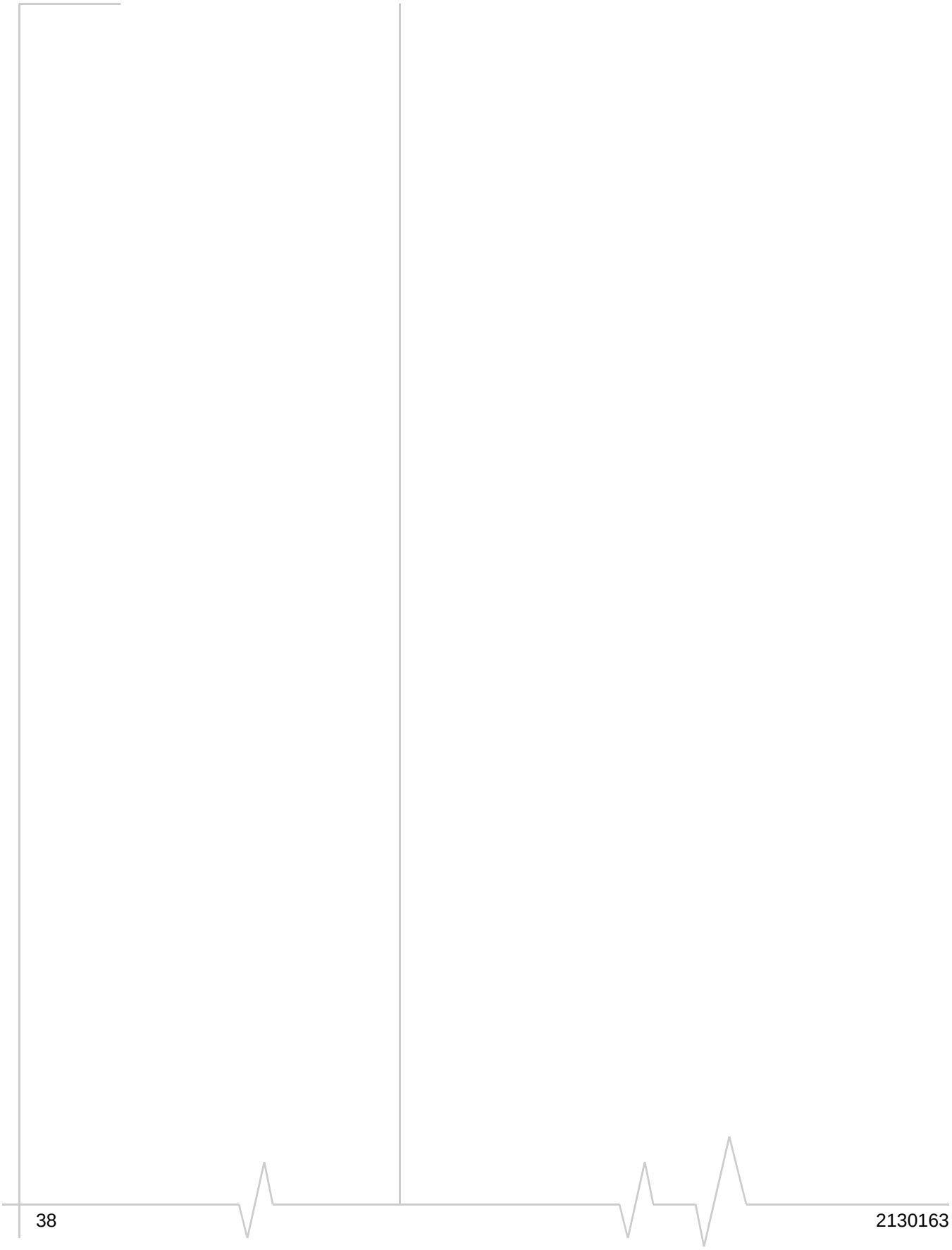
Voice-assisted and automated activation

To use Voice-assisted or automated activation:

1. If prompted to, connect an approved headset to the AirCard, and put the headset on.
2. Select the **Voice-Assisted Activation** or **Automated Activation** radio button and click **Next**.
3. The wizard advises that it will make a network connection, dialing the displayed number. Leave the number unchanged unless told by a technical service representative to enter a different value. Click **Next**.
4. Follow any instructions or prompts provided to activate the card.

Watcher displays the activation progress in the call status area. When the process is complete you should see the message "Ready to Connect". At this point your AirCard is ready to use. The next chapters explain how to use Watcher to manage and monitor your connections.

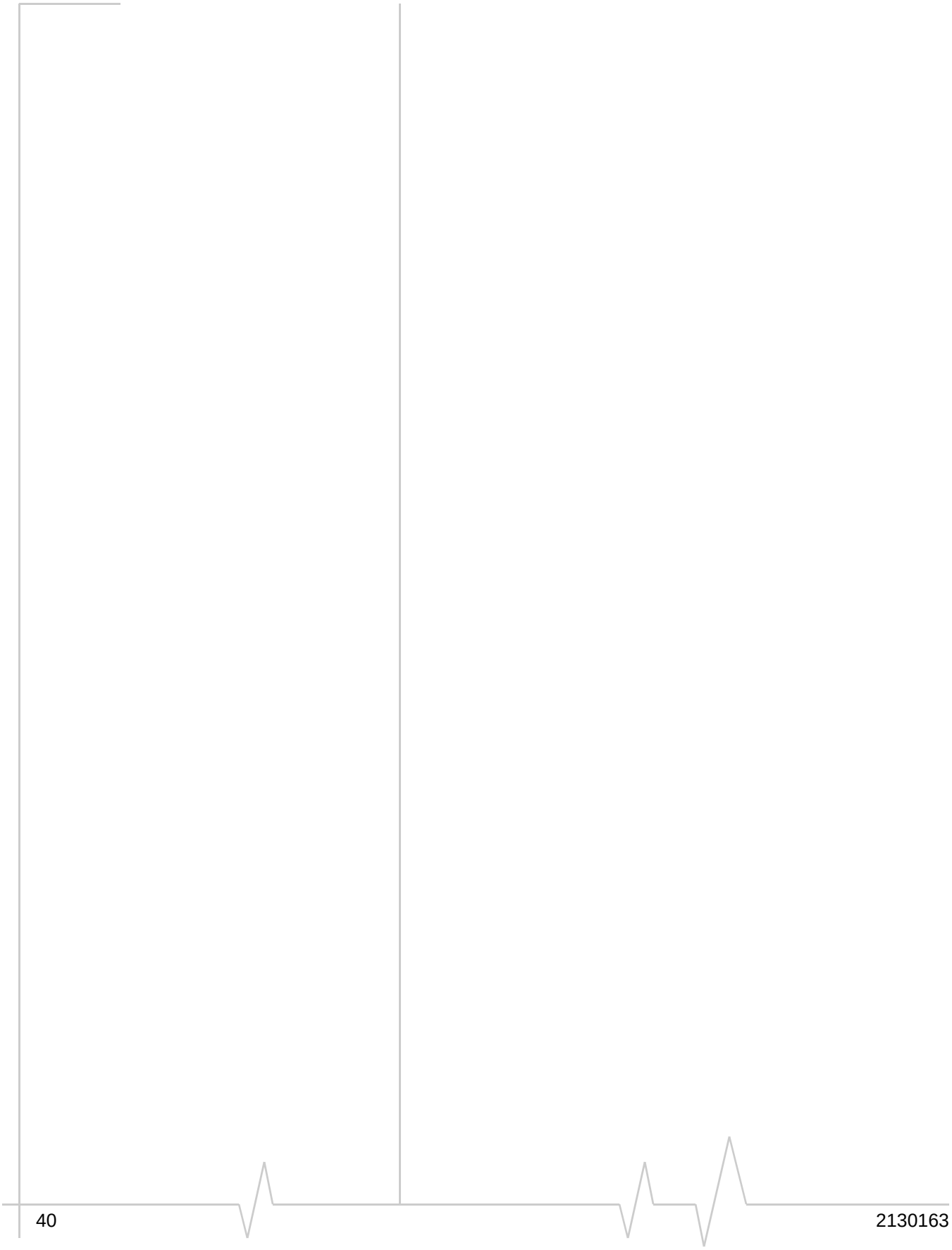
Note: If you do not get the "Ready to Connect" *message, retry the process. If the process continues to fail, use manual activation or contact your service provider.*



6: Care and Maintenance of Your AirCard

As with any electronic device, the AirCard must be handled with care to ensure reliable operation. Follow these guidelines in using and storing the AirCard:

- Do not apply adhesive labels to the AirCard. This may cause the AirCard to become jammed inside the card slot.
- Optimal signal strength is usually obtained when the antenna is perpendicular to the modem. The antenna should bend easily at the hinge. Do not forcefully bend the antenna.
- When storing or transporting your PC in a case (such as a notebook case), remove the AirCard antenna and store it in a compartment where it cannot be crushed or broken.
- The AirCard should fit easily into your PC Card slot. Forcing the AirCard into a slot may damage connector pins.
- Protect the card from liquids, dust, and excessive heat.
- When not installed in your computer, store the AirCard in a safe place.



7: Watcher™ Basics

7

- Starting and Closing Watcher
- Components of the Watcher Window
- Interpreting Icons
- Online Help
- Troubleshooting

Watcher is the application that allows you to manage and monitor the connection between the AirCard and the CDMA network. You use Watcher to:

- Determine your signal strength, roaming status, 1X high-speed data availability, and other network connection parameters
- Initiate voice and data calls
- View call statistics
- Receive and send SMS messages
- Customize features and options

You can also use Watcher to manage and monitor connections with a WiFi network adapter.

Without running Watcher, you can make a high-speed data connection simply by inserting the AirCard[1], and then you launch whatever application you want to use (such as your web browser or e-mail application). However, to make use of other features of the AirCard, you must run Watcher.

1. Autolaunch is supported on notebook PCs only.
   A high-speed connection is initiated upon insertion of the AirCard, provided:
   a) you have previously enabled, in Watcher, “Always-on” for the high-speed connection, and
   b) WiFi coverage is either not available, or is available but no WiFi connections have been set to autoconnect.

Starting and closing Watcher

Notebooks

Depending on your settings in the Options window, Watcher launches automatically anytime you insert the AirCard. You can also launch Watcher by:

- Double-clicking the Watcher icon on your desktop
- Selecting **Start > Programs > Sierra Wireless > AirCard 555 > AirCard 555 Watcher**

The standard Windows control buttons in the upper right corner of the window are used to minimize or close Watcher. When minimized, Watcher does not appear as a taskbar button. Instead, an icon is shown in the system tray, usually at the right end of the taskbar. (See "Minimized Icons" on page 49.)

Pocket PCs

To start Watcher on Pocket PCs:

- Select **Start > Programs >** **AirCard 555 Watcher**

On Pocket PCs, when you open another application from the Start menu, Watcher remains running although it is not visible. An icon appears at the bottom of the Today screen to indicate that Watcher is running in the background. (See "Minimized Icons" on page 49.)

Windows CE manages your applications, shutting down applications that are not being used in order to save memory. It should not be necessary to close Watcher, but you can close (quit) the application when it is displayed by tapping **<Ctl>+q** on the soft keyboard.

Handheld PCs and CE .NET devices

To start Watcher on Handheld PCs and CE .NET devices:

- Select **Start > Programs >** **AirCard 555 Watcher**

On Handheld PCs and CE .NET devices, use the standard Windows control buttons in the upper right corner of the window to minimize or close Watcher.

When minimized, Watcher does not appear as a taskbar button. Instead, an icon is shown in the system tray, usually at the right end of the taskbar. (See "Minimized Icons" on page 49.)

Components of the Watcher window

The window has three areas that display messages and icons: the Connection Status Area, Call Status Area, and Indicator Area.

Subject to feature availability, there are several tabs:

- **VOICE**, with a dial pad for making calls
- **DATA**, allowing you to connect and disconnect Internet and dial-up data services.
- **WIFI** WiFi, allowing you to manage and monitor connections with a WiFi device.

The tabs are along the top right (or along the bottom on Pocket PCs).

A menu bar is located on the upper left side of the window (or along the bottom of the screen on Pocket PCs).

Windows control buttons are in the top right corner.

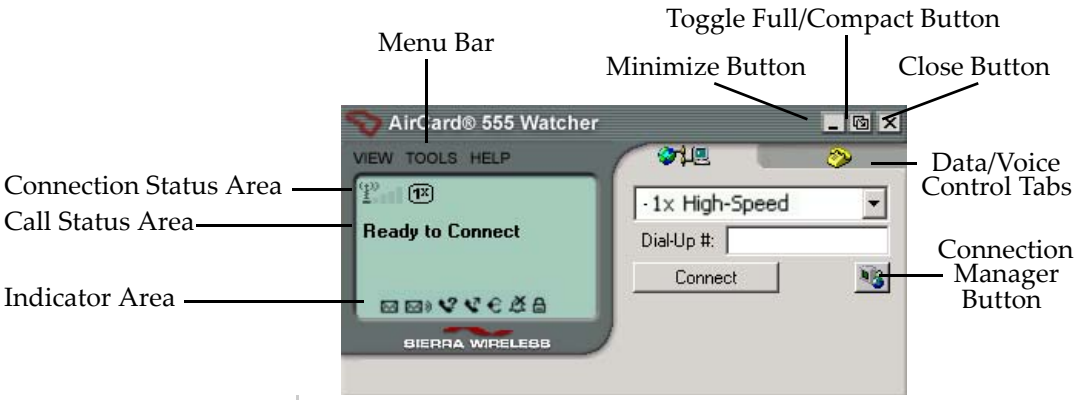


Figure 7-1: Watcher data tab with all icons lit (Notebooks, Handheld PCs, and CE .NET devices)

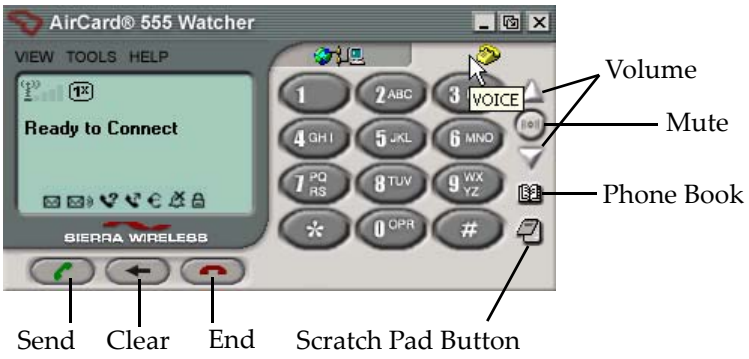


Figure 7-2: Watcher voice tab with all icons lit (Notebooks, Handheld PCs, and CE .NET devices)

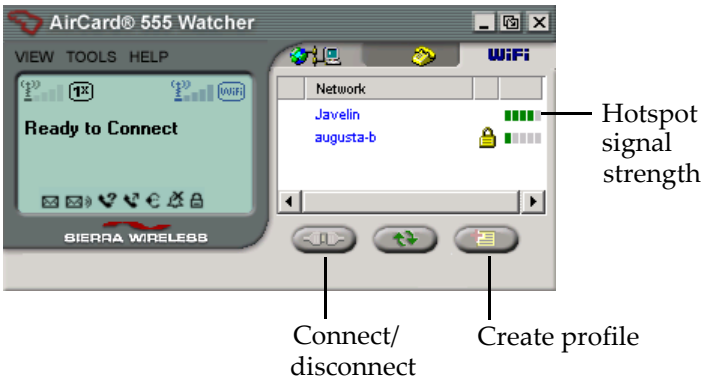


Figure 7-3: Watcher WiFi tab with all icons lit (Notebooks)

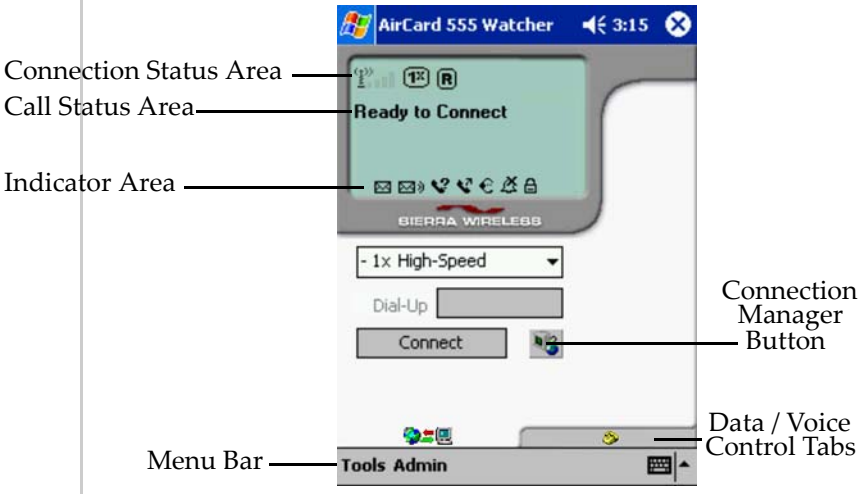


Figure 7-4: Watcher data tab with all icons lit (Pocket PCs)

For a detailed description of each option in the menus, see the online help.

Window controls

- The **Minimize** button closes the Watcher window but leaves the application running. When Watcher is minimized, the Watcher icon in the system tray can be used to determine the AirCard status. (See page 49.) This icon replaces a taskbar button for Watcher.

  Once minimized, you can redisplay the Watcher window by selecting the Watcher icon in the system tray. You can also restore the window by double-clicking the desktop shortcut or launching Watcher from the Start menu.
- The **Toggle Full/Compact** button is used to switch between the full Watcher window and the compact view:

  The compact view allows you to see connection status and indicators while using less space on the desktop.

  To make calls, data connections, disconnect, or access Watcher features, you must use full view. To return to full view, select the view toggle button in the top right.
- The **Close** button is used to exit Watcher (or hide the screen on Pocket PCs).

Docking

You can set the Watcher window to "jump" to the edge of your screen when you move the window close to an edge. This lets you easily position Watcher in a corner of the screen.

- Select **VIEW > Docking**

Always On Top

You can set Watcher to always display in front of other windows. This allows you to monitor connection status while using another maximized application, such as your web browser.

- Select **VIEW > Always On Top**

Interpreting icons

Watcher makes extensive use of icons to indicate status and events. The various icons are described in the following sections on the display areas of Watcher.

Connection Status Area

The Connection Status Area uses the icons shown below.

Note: Optimal signal strength is obtained when the antenna is perpendicular to the AirCard.

Table 7-1: Connection Status Area icons

Icon	Meaning
	AirCard not detected (displayed in the left part of the Connection Status Area).
 	The Signal Strength indicator (displayed in the left part of the Connection Status Area) uses bars to show the intensity of the radio signal of the CDMA network. The number of bars increases as signal strength increases to a maximum of five bars. When the bars are dimmed and the antenna icon is crossed out, no connection is possible for one of these reasons: • No antenna is attached • You are outside the CDMA network coverage area • The signal strength is too weak • A network or account problem is preventing the AirCard from obtaining service
	Indicates whether 1X high-speed is available in this area.
	The Roaming Status indicator shows whether you are roaming onto the network of a service provider other than your own. When the indicator is off (gray), you are within the local coverage area of your service provider. When the indicator is on (solid black), you are in a “preferred” roaming area. When the indicator is blinking, you are within the coverage area of a CDMA network but not in a “preferred” roaming area. Your coverage area and account charges depend upon your service provider and the type of account you have. There may be surcharges for roaming service that vary based on whether you are in a preferred or non-preferred roaming area. If there is no roaming agreement between your service provider and the local carrier, you may be unable to complete calls.
	WiFi device not detected (notebook PCs only; displayed in the right part of the Connection Status Area).
	No WiFi coverage (notebook PCs only)
	In WiFi coverage; not connected (notebook PCs only)
	WiFi connected (notebook PCs only)
	WiFi signal strength (notebook PCs only; displayed in the right part of the Connection Status Area)

Table 7-1: Connection Status Area icons (cont.)

Icon	Meaning
The In Use indicator shows whether a call is in progress. No icon is displayed when the AirCard is idle. Otherwise, one of these icons is displayed:	
	A voice call is in progress.
	A circuit switched data call is in progress.
	A high-speed (1X) packet data call is in progress.
	A high-speed (1X) packet data connection is dormant; the radio channel has been released allowing you to make and receive voice calls. You can resume data transmission (when not in a voice call) without the need of re-establishing the connection. Some applications may not be able to function on a dormant connection.
	A fatal error has occurred and the AirCard is inoperable. (This may be resolved by closing Watcher and restarting your PC.)

Call Status Area

The Call Status Area displays messages related to the status or progress of a connection.

Where a duration timer is shown, timing begins when the call is initiated—not from the time the call is fully connected. This is a measure of the time the AirCard has been using the radio channel (a wireless network resource).

"Click this display to exit PowerSave mode" indicates that the AirCard could not find a CDMA system within a 15 minute interval. To conserve power, the AirCard reduces channel scanning to once every three minutes. To force the AirCard out of PowerSave mode, click in the Call Status Area. The AirCard performs a channel scan and, if no network is detected, returns to PowerSave mode.

Indicator area

The Indicator area displays icons that notify you when you receive messages and indicate whether certain options and features are enabled. The icons are black when “on” and gray when “off”.

Table 7-2: Indicator Area icons

Icon	Meaning
	(If Watcher is integrated with Outlook and Outlook is running, this information does not apply.) The SMS message indicator shows whether you have unread messages. A blinking icon indicates that there are one or more urgent or important unread messages. To display the SMS Express window (in which the messages are displayed) select **TOOLS > SMS Express...** or double-click the icon.
	The voice mail indicator shows whether you have unheard voice messages. To hear the messages, you must connect to your voice messaging system. Double-click this icon to dial your voice messaging system. The phone number for your voice messaging system can be changed under **TOOLS > Options**.
	The missed call indicator appears if you failed to answer an incoming call. To view the phone number(s) of any missed calls, double-click the icon to display the Call Log.
	The auto-answer indicator shows whether Watcher is set to automatically answer incoming calls. You can enable and disable this feature under **TOOLS > Options**.
	The headset indicator shows whether a headset (or TTY device) is connected to the AirCard.
	This indicator shows whether the silent ring feature is enabled (the icon is shown when the audible ring is off). When enabled, no sound is played when an incoming call is received. You can enable and disable this feature under **TOOLS > Options**.
	The privacy indicator shows whether encryption is in use on voice calls. (Encryption prevents your calls from being monitored.) The AirCard automatically uses encryption where it is available on the network.

Minimized Icons

Watcher displays an icon in the Windows system tray (which is usually located in the lower right corner of your screen, or the Today screen of Pocket PCs). The system tray icon indicates your connection status or notifies you when you have voice mail or SMS messages, or when you have missed a call.

Table 7-3: System tray icons

Icon	Meaning
	You are in service on the CDMA network but have no active voice or data connection. The number of red bars indicates the signal strength. If you have an AirCard and a WiFi network adapter, and the AirCard is in service on the CDMA network, the signal strength is that of the CDMA network. If the AirCard is not in service or you don't have an AirCard inserted, the signal strength is that of the WiFi network.
	You have an active voice or data connection. The number of green bars indicates the signal strength. If you have an AirCard and a WiFi network adapter, and the AirCard is in service on the CDMA network, the signal strength is that of the CDMA network. If the AirCard is not in service or you don't have an AirCard inserted, the signal strength is that of the WiFi network.
	You missed (failed to answer) an incoming call. You can view the number of the caller in the Call Log.
	(If Watcher is integrated with Outlook and Outlook is running, this information does not apply.) You have unread SMS message(s).
	You have voice mail.

Only one icon can be displayed at a time. The priority of icons, from highest to lowest, is:

- Missed call(s)
- SMS message(s)
- Voice mail
- Active or inactive connection.

For example, if you have unread SMS messages, and then receive a voice mail, the icon still displays as an unread SMS message. If you then have an unanswered call, the icon changes to a missed call.

Online Help

Watcher includes extensive online help to provide operating hints and step-by-step instructions for getting the most from your AirCard.

You can access online help in several ways:

Notebooks:

- Press <F1> in any window.
- Click the **Hints** button available in many windows.
- Use Windows Explorer to navigate to **Program Files > Sierra Wireless Inc > AirCard 555 > Generic > Watcher.chm**. Double-click to open the help file.

The help file has a table of contents and an index.

Handheld PCs and CE .NET devices:

- Use the help ? button available on most windows.
- Select **Start > Help > AirCard 555** to open the help file at the table of contents.

Pocket PCs

- With a Watcher screen displayed, select **Start > Help**. Help for that screen will appear.
- From the Today screen, select **Start > Help > AirCard 555**. The help file opens at the table of contents.

Troubleshooting

The online help includes descriptions of most common error messages. Look in the table of contents under Troubleshooting.

For help with other problems:

- Consult the Sierra Wireless web site at www.sierrawireless.com, where you will find an extensive knowledge base that can be searched to address most problems, and the Installation Troubleshooting wizard (in the Support & Download section).
- On notebook PCs, you can also access the Installation Troubleshooting wizard through **Start > Programs > Sierra Wireless > AirCard 555 > Installation Troubleshooting Wizard**.
- Contact your service provider.

8: Fax Configuration

- Fax support
- WinFax PRO configuration
- Receiving faxes

Fax support

The AirCard permits standard fax transmissions to be sent and received using third-party software.

The AirCard is capable of Fax Class 2.0 operation only.

Note: Sierra Wireless has not tested any Windows CE fax applications with the AirCard, so there is no guarantee of support for any particular application.

WinFax PRO configuration

Note: To work properly with the Sierra Wireless modem, WinFax PRO must be configured.

Note: Other versions of WinFax PRO have not been tested by Sierra Wireless.

One of the most popular fax software applications is Symantec™ WinFax® PRO. When properly installed and configured, WinFax communicates with the AirCard in the same manner as with traditional wireline, land-based modems, simulating a standard fax machine for communication with other fax machines or fax modems.

Third-party software supported

- Symantec™ WinFax® PRO version 10.0 for Microsoft® Windows® operating systems: Windows 95 (B and C), 98, 98SE, Me, 2000, and XP (Home and Professional versions)

Requirements before configuring WinFax PRO

These instructions assume that:

- **Symantec WinFax PRO version 10.0** has been installed on your computer, according to the instructions provided by the manufacturer.
- The **AirCard drivers and Watcher software** have been installed on your computer.
- The **AirCard is connected** to your computer by being inserted into the PC Card slot.

Please consult the appropriate documentation and support resources to ensure that the software and hardware are properly installed and configured. Test other connection types (voice, data) to ensure that the modem is working properly before proceeding.

Initial WinFax setup

Note: After configuration, if the AirCard is not inserted before WinFax PRO is launched, the WinFax settings for the AirCard are lost and you must re-enter them.

Note: WinFax PRO 10.0 must already be installed on your computer. Also ensure that the AirCard is inserted in your computer's PCMCIA (PC Card) slot before proceeding.

1. Launch the WinFax PRO Message Manager as described in your WinFax documentation (via the Start menu or desktop icon).
2. From the menu bar, choose **Tools > Program Setup**.
3. Double-click **Modems and Communications Devices**.
4. Check the Active box for the **Sierra Wireless AirCard 555 Modem** only. Uncheck any other Active checkboxes for *all* other devices.

   If a message appears, saying that "The AirCard 555 has not been configured to work with WinFax PRO. Do you want to run the WinFax PRO modem configuration wizard now?", choose **Yes** and accept the defaults for the wizard (**Next**, **Next**, **Next**, and **Finish**). Otherwise skip to step 5.
5. When prompted for Locations, choose **Cellular (PCS/GSM-Digital)** only. (You may need to check the Active box for the AirCard 555 again.)

Modem Properties

6. Highlight **Sierra Wireless AirCard 555 Modem** and choose **Properties**.
7. Select the **General** tab.
8. Under Communications Port, ensure that **TAPI** and **Initialize at 19200 bps** are selected.
9. Under the Modem Type category, ensure that **Class 2.0** is selected.
10. Select the **Fax** tab.
11. Ensure that **Regular or Cellular (PCS-GSM-Digital)** has been selected from the Modem Connection drop-down list.
12. In the Initialization String Sequence section, the fields should be filled in as follows:
    - **AT&F&C1&D2S7=55** (May or may not be set by default.)
    - **ATE1V1**
    - **AT$QCVAD=2**

13. Beside the Flow Control option, enter:
    - **AT+FCLASS=2.0;+FLO=2**
14. Ensure that the **Use hardware flow control** box is checked.
15. Click **OK** in the Properties window.

Receive and Dialing Setup

16. Click the **Receive Setup** button.
17. Check the box beside **Automatically answer incoming calls** and set the application to answer after **2 rings**.
18. Click **OK**.

Note: To determine the modem's phone number, launch Watcher and choose **HELP > About**. *(***Admin >About** *on Pocket PCs)*

19. Click **Dialing Setup**, then select the **Location** tab.
20. Ensure that the phone number for the modem is entered into the appropriate fields. Click **OK**.
21. Choose **OK** again, then **Close**.

The modem is now configured for sending faxes. See the section below for setting the modem to receive a fax.

Note: After configuration, if the AirCard is not inserted when WinFax PRO is launched, the WinFax settings for the AirCard are lost and you must re-enter them.

Receiving faxes

Note: The CDMA network requires that you pre-configure the modem for answering a fax call before the call rings.

To receive faxes successfully, you must set the AirCard to receive incoming calls as fax calls, not data or voice. To do so:

1. Start the Watcher software from the Windows Start menu or the desktop icon.
2. Select **TOOLS > Options** to open the Options window.
3. Select the **Network** tab of the Options window.
4. Use the **Incoming Calls: Answer** drop-down menu to select one of:
    - next call as Fax
    - all calls as Fax
5. Click **OK** to save the setting.
6. Start WinFax and wait for the incoming call.

Note: Watcher reverts to answer all calls as voice whenever it is started.

If configured for "next call as Fax", Watcher reverts to answer as voice calls after any of the following:

- The next call arrives (answered or not)
- Ten minutes elapse without receiving a call
- Watcher is restarted
- The setting is changed

9: Technical Specifications

9

- LED operation
- Radio frequency and electrical specifications
- Environmental specifications

This chapter describes the function of the LED, and provides technical product data for the AirCard.

LED operation

The AirCard has a single red/green LED on the antenna end of the card. The LED operates as follows:

Table 9-1: LED operation

LED Behavior	Indicates
Solid amber*	The AirCard is powering up.
Blinking amber	The AirCard is searching for a channel.
Solid green	A call is in progress.
Blinking green	The AirCard has acquired a channel and is in idle mode (no call is in progress).
Solid red	An error has occurred.

* Amber is used to describe the color of the LED when both red and green are lit.

Radio frequency and electrical specifications

Table 9-2: Radio frequency and electrical specifications

Approvals	Compliant with: IS-95A, IS-95B, IS-98D, IS-707A, IS707A-1, CDMA Developers Group FCC (ID: N7NACRD555) Industry Canada
Voltage	+5 Vdc from PCMCIA Slot
Current	Maximum: 680 mA Typical: 150 mA
Transmitter power	200 mW (+23 dBm)
Transmit	PCS: 1850 to 1910 MHz Cellular: 824 to 849 MHz
Receive	PCS: 1930 to 1990 MHz Cellular: 869 to 894 MHz
Channel spacing	1.25 MHz
Frequency stability	±150 Hz

Environmental specifications

Table 9-3: Environmental specifications

Operating temperature	-30 to +60°C (ambient, outside PCMCIA enclosure)
Storage temperature	-30 to +85°C
Humidity	95%, non-condensing
Vibration	15 g peak 10 to 2000 Hz (non-operating)
Drop	30” (76.2 cm) on to vinyl covered concrete

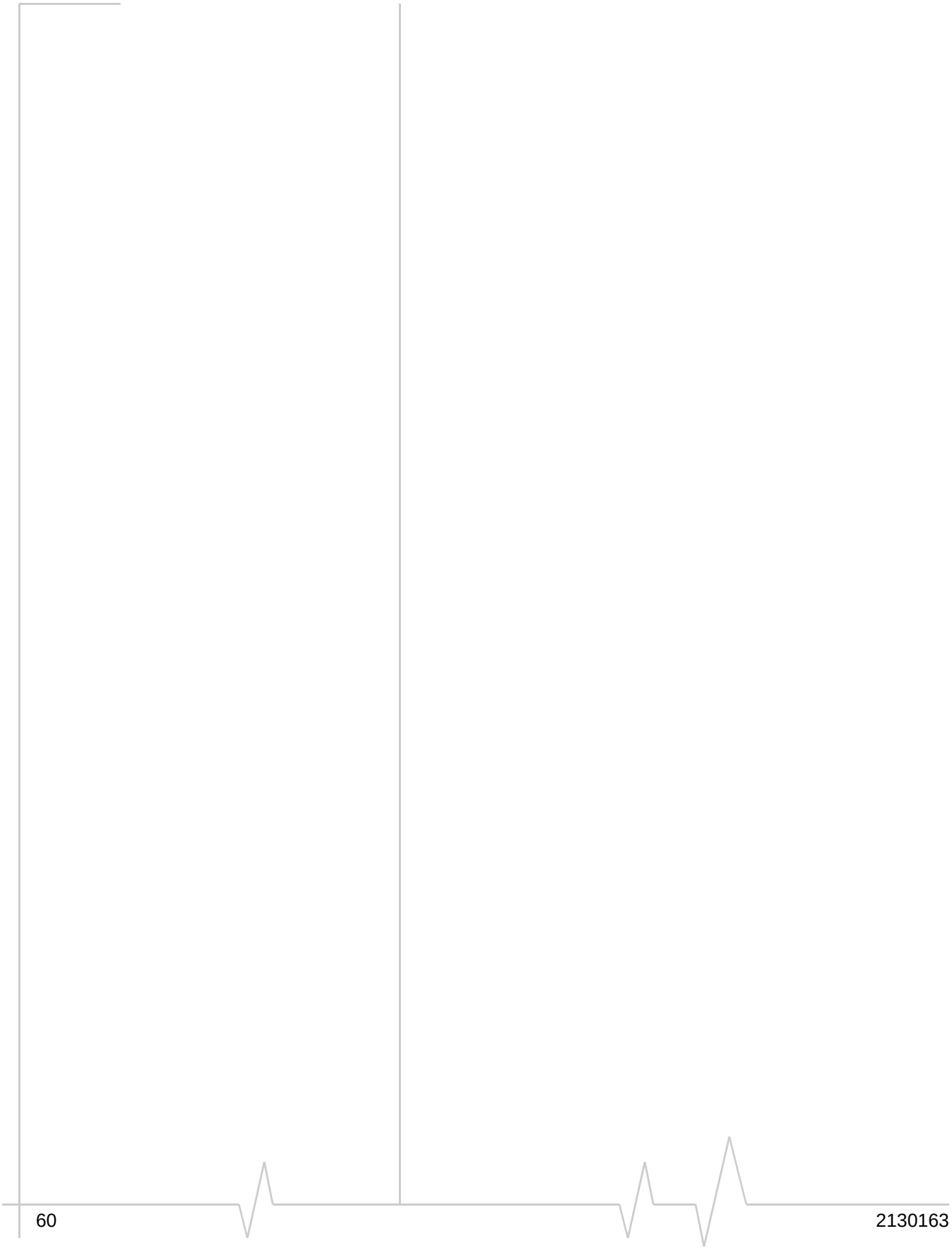
Appendix A: Glossary

A

1X	One Times Radio Transmission Technology (the "one times" refers to the frequency spectrum)
bps	**bits per second**—The actual data speed over the transmission medium.
CAB	CABinet files. A Windows executable file format containing system installation instructions and content for self-extraction and installation.
CDMA	**Code Division Multiple Access**—A wideband spread spectrum technique used in digital cellular, personal communications services, and other wireless networks. Wide channels (1.25 MHz) are obtained through spread spectrum transmissions, thus allowing many active users to share the same channel. Each user is assigned a unique digital code, which differentiates the individual conversations on the same channel.
CDMA 1X	Also known as 1X, this is a high-speed standard for CDMA cellular communications.
circuit switched cellular	V.xx modem communications over a cellular network. It uses a dedicated connection circuit, in contrast to packet-switched. The user is charged by the carrier for the duration of the connection.
DHCP	**Dynamic Host Configuration Protocol**—A protocol used to automatically assign IP addresses and related information. DHCP also provides safe, reliable TCP/IP network configuration.
dormant	The packet data connection has the logical PPP session left open while the underlying physical link (the radio channel) is released. When traffic is to resume, a radio channel is re-aquired and the original PPP session resumes.
E911	**Enhanced 911**—The capability to automatically identify, to emergency dispatchers, the location from which a wireless call is being made. Phase I requires carriers to provide the telephone number of a mobile making a 911 call and the location of the cell site or base station handling the call. Phase II requires carriers to deliver more specific latitude and longitude location information, known as Automatic Location Identification (ALI). This typically involves GPS receivers at the mobile.
ESN	**Electronic Serial Number**—The unique serial number assigned to the modem for cellular network use.

FCC	**Federal Communications Commission**—The U.S. federal agency that is responsible for interstate and foreign communications. The FCC regulates commercial and private radio spectrum management, sets rates for communications services, determines standards for equipment, and controls broadcast licensing. Consult **www.fcc.gov**.
firmware	Software stored in ROM or EEPROM; essential programs that remain even when the system is turned off. Firmware is easier to change than hardware but more permanent than software stored on disk.
host	1. A computer that uses a modem or a similar device to answer a calling computer. 2. A source or destination in the communication network. 3. A computer that contains data or files to be accessed by client computers. Also known as a server.
IP	**Internet Protocol**—The basic Internet transport mechanism. Also, an OSI layer 3 network layer protocol.
IP address	A unique address on the Internet. Each modem must have one, to operate on a packet network. The IP address is a unique number consisting of four parts separated by dots.
IS	**Interim Standard**—After receiving industry consensus, the TIA forwards the standard to ANSI for approval.
IS-95	The standard for CDMA.
kbps	**kilobits per second**—Actually 1000, not 1024, as used in computer memory size measurements of kilobytes.
LAN	Local Area Network
LED	**Light Emitting Diode**—A semiconductor diode that emits visible or infrared light.
MHz	**Mega-Hertz**—One million cycles per second.
packet	A short fixed-length block of data including a header that is transmitted as a unit in a communications network.
PC Card™	Add-in memory and communications cards for portable computers. PC Card is a trademark of the PCMCIA.
PCMCIA	**Personal Computer Memory Card International Association**—The organization that standardizes PC Cards.
PCS	**Personal Communications Services**—A cellular communication infrastructure that uses a different frequency range than AMPS.
QNC	**Quick Net Connect**—A CDMA connection method that reduces call setup time for circuit switched connections to the Internet.

roaming	A cellular subscriber is in an area where service is obtained from a cellular service provider that is not the subscriber's provider.
SMS	**Short message services**—A feature that allows users of a wireless device on a wireless network to receive or transmit short electronic alphanumeric messages (up to 160 characters, depending on the service provider).
system tray	Usually located in the lower right corner of your screen, or the Today screen of Pocket PCs. Also known as the (Windows) status area.
TCP	**Transmission Control Protocol**—The common underlying communication protocol used on the Internet. A connection handshake establishes a point to point logical connection. In contrast to UDP, TCP ensures both ends of the connection are present and active on the network. TCP ensures delivery of datagrams.
TDD	**Telecommunications Device for the Deaf**. See TTY
TIA	**Telecommunications Industry Association**—A standards setting trade organization, whose members provide communications and information technology products, systems, distribution services and professional services in the United States and around the world. Consult **www.tiaonline.org**.
TTY	**TeleTYpe**—Refering to early wireline data terminals, it now applies to devices used to aid hearing and speech impaired people to use the telephone system.
UDP	**User Datagram Protocol**—A low overhead, connectionless, packet delivery IP protocol. Unlike TCP, UDP does not guarantee delivery of datagrams.
VPN	Virtual Private Network
WiFi	Wireless Fidelity—a high-frequency wireless local area network (WLAN), known as 802.11.



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